

IN THE CLAIMS

Please amend claims 15-17 and 30-56 as follows:

1-14 (Canceled)

15. (Currently Amended) A ~~computerized~~-system for indexing raw data from at least one data source based on detecting a semantic temporal event included in the raw data recorded on a media, said system comprising:

a ~~computerized~~-knowledge-based modeling unit for generating multiple-layer models for identifying said semantic temporal event ~~recorded on the media~~;

a storage mechanism for storing said multiple-layer models;

an ~~computerized~~-observation collection unit for extracting, from said raw data from the at least one data source, temporal observations ~~recorded on the media~~ according to said multiple-layer models ~~for the semantic temporal event~~; [[and]]

a ~~computerized~~-temporal event detection unit for detecting one or more occurrences of the semantic temporal event based on said temporal observations and said multiple-layer models;  
and

an indexing mechanism for generating an index for said raw data based on the semantic temporal events detected by the temporal event detection unit.

16. (Currently Amended) The ~~computerized~~-system according to claim 15, further including comprising:

[[an]] a computerized event characterization unit for characterizing said occurrences of the semantic temporal event, detected by said ~~computerized~~-temporal event detector, to produce a characterization for the occurrences of the semantic temporal event.

17. (Currently Amended) The ~~computerized~~ system according to claim 16, further including comprising:

a storage mechanism for storing the characterization produced by said event characterization unit;

an a-computerized event prediction unit for performing temporal event prediction based on said characterization;

an a-computerized event model updating unit for modifying said multiple-layer models based on said characterization; and

an a-computerized event simulation unit for simulating parts of said semantic temporal event according to said characterization.

18 – 29 (Canceled).

30. (Currently Amended) The ~~computerized~~ system of according to claim 15, wherein the semantic temporal event includes a sports event.

31. (Currently Amended) The ~~computerized~~ system of according to claim 30, wherein said sports event includes a soccer game.

32. (Currently Amended) The ~~computerized~~ system of according to claim 15, wherein said multiple-layer models include a high level domain-specific knowledge model and a dynamic hierarchical event model.

33. (Currently Amended) The ~~computerized~~ system of according to claim 32, wherein said high level domain-specific knowledge model includes rules of a sports game.

34. (Currently Amended) The ~~computerized~~ system of according to claim 32, wherein said dynamic hierarchical event model includes a hierarchical decision tree.

35. (Currently Amended) The ~~computerized-system of~~ according to claim 32, wherein said dynamic hierarchical event model includes an entity-relationship-diagram.

36. (Currently Amended) The ~~computerized-system of~~ according to claim 15, wherein said at least one data source includes at least one data acquisition device including a camera, a microwave sensor, a sound recorder, and an input data stream selected from the group consisting of video, audio, text, and temporal features.

37. (Currently Amended) The ~~computerized-system of~~ according to claim 36, wherein said temporal features include tracking position data.

38. (Currently Amended) The ~~computerized-system of~~ according to claim 15, wherein said at least one data source includes a data stream sent through a network connection.

39. (Currently Amended) The ~~computerized-system of~~ according to claim 38 wherein the data stream is a video stream with synchronized audio track.

40. (Currently Amended) The ~~computerized-system of~~ according to claim 15, wherein the ~~computerized~~-observation collection unit is simultaneously connected to more than one data source.

41. (Currently Amended) The ~~computerized-system of~~ according to claim 15, wherein said ~~computerized~~-temporal event detection unit includes an integration unit, a detection unit, and a fusion unit, and said integration unit combines a plurality of observation streams from a plurality of data sources, the detection unit detects a same event using a plurality of detection means to produce a plurality of detection results, and said fusion unit fuses the plurality of detection results to produce a single detection decision.

42. (Currently Amended) The ~~computerized~~ system of according to claim 16, further including comprising:

an event storage, in which detected occurrences of temporal semantic events are stored;  
an events statistics extractor to compute statistical information about the detected occurrences; and

an event statistics storage unit to store the statistical information.

43. (Currently Amended) A ~~computerized~~ system for indexing raw data from at least one data source based on detecting a semantic temporal event included in the raw data recorded on a media, said system comprising:

a ~~computerized~~ knowledge-based modeling unit for generating multiple-layer models for said semantic temporal event;

a storage mechanism for storing said multiple-layer models;

an ~~computerized~~ observation collection unit for extracting, from said raw data from said at least one data source, temporal observations according to said multiple-layer models for the semantic temporal event;

a ~~computerized~~ temporal event detection unit for detecting one or more occurrences of the semantic temporal event included in the raw data recorded on the media based on said temporal observations and said multiple-layer models;

an a ~~computerized~~ event characterization unit for characterizing said occurrences of the semantic temporal event, detected by said ~~computerized~~ temporal event detector, to produce a characterization for the occurrences of the semantic temporal event;

a storage mechanism for storing the characterization produced by said event characterization unit;

~~an a-computerized~~ event prediction unit for performing temporal event prediction based on said characterization;

~~an a-computerized~~ event model updating unit for modifying said multiple-layer models based on said characterization; [[and]]

an event simulation unit for simulating parts of said semantic temporal event according to said characterization; and

an indexing mechanism for generating an index for said raw data based on at least one of the semantic temporal events detected by the temporal event detection unit and the characterization for the occurrences of the semantic temporal event.

44. (Currently Amended) The ~~computerized~~ system of according to claim 43, wherein the semantic event includes a sports event.

45. (Currently Amended) The ~~computerized~~ system of according to claim 44, wherein said sports event includes a soccer game.

46. (Currently Amended) The ~~computerized~~ system of according to claim 43, wherein said multiple-layer models include a high level domain-specific knowledge model and a dynamic hierarchical event model.

47. (Currently Amended) The ~~computerized~~ system of according to claim 46, wherein said high level domain-specific knowledge model includes rules of a sports game.

48. (Currently Amended) The ~~computerized~~ system of according to claim 46, wherein said dynamic hierarchical event model includes a hierarchical decision tree.

49. (Currently Amended) The ~~computerized-system of~~ according to claim 46, wherein said dynamic hierarchical event model includes an entity-relationship-diagram.

50. (Currently Amended) The ~~computerized-system of~~ according to claim 43, wherein said at least one data source includes at least one data acquisition device including a camera, a microwave sensor, a sound recorder, and an input data stream selected from the group consisting of video, audio, text, and temporal features.

51. (Currently Amended) The ~~computerized-system of~~ according to claim 50, wherein said temporal features include tracking position data.

52. (Currently Amended) The ~~computerized-system of~~ according to claim 43, wherein said at least one data source includes a data stream sent through a network connection.

53. (Currently Amended) The ~~computerized-system of~~ according to claim 52, wherein the data stream is a video stream with synchronized audio track.

54. (Currently Amended) The ~~computerized-system of~~ according to claim 43, wherein the ~~computerized~~-observation collection unit is simultaneously connected to more than one data source.

55. (Currently Amended) The ~~computerized-system of~~ according to claim 43, wherein said ~~computerized~~-temporal event detection unit includes an integration unit, a detection unit, and a fusion unit, and said integration unit combines a plurality of observation streams from a plurality of data sources, the detection unit detects a same event using a plurality of detection means to produce a plurality of detection results, and said fusion unit fuses the plurality of detection results to produce a single detection decision.

56. (Currently Amended) The ~~computerized system of~~ according to claim 43, further comprising:

an event storage, in which detected occurrences of temporal semantic events are stored;

an events statistics extractor to compute statistical information about the detected occurrences; and

an event statistics storage unit to store the statistical information.

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